

5 WTC STANDBY GENERATOR ROOM FIRE ALARM AND SECURITY SYSTEM



ORIGINAL SIGNED & SEALED BY
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I HEREBY CERTIFY THAT THIS IS A TRUE AND CORRECT COPY OF ONE OF THE CONTRACT DOCUMENTS, CONSTITUTING A PART OF CONTRACT NO. WTC-945.071, IN THE FORM IN WHICH SAID DOCUMENTS EXISTED AT THE TIME THE SAID CONTRACT WAS EXECUTED BY THE PARTIES.

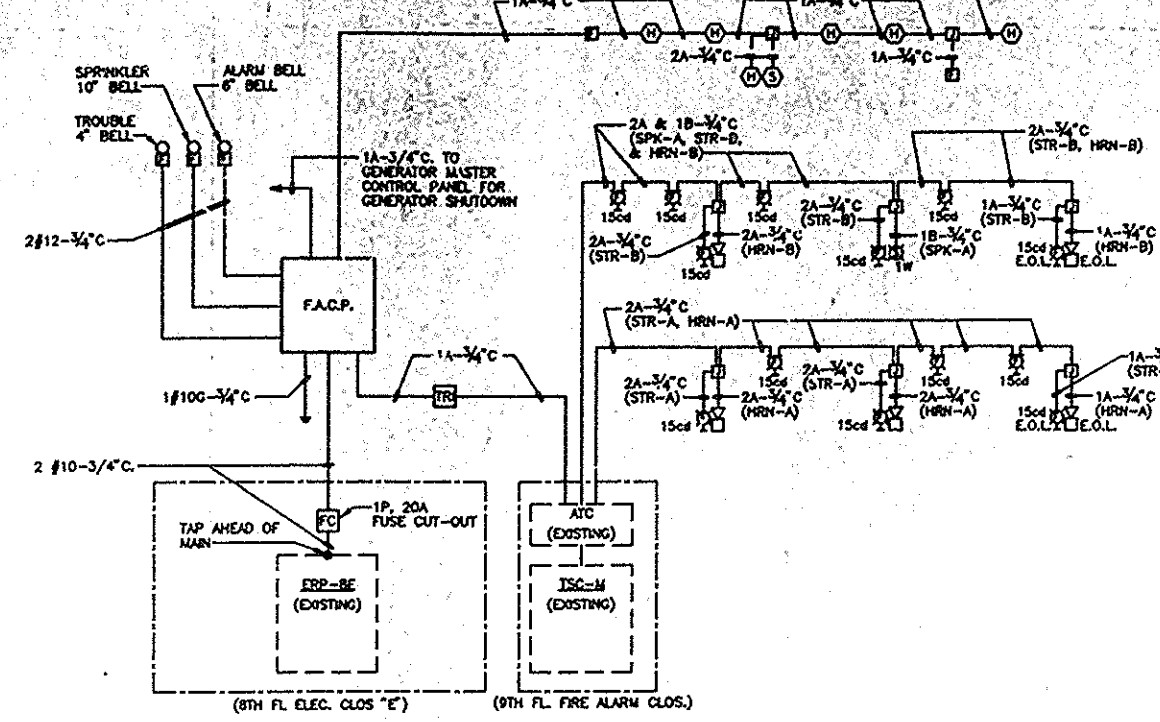
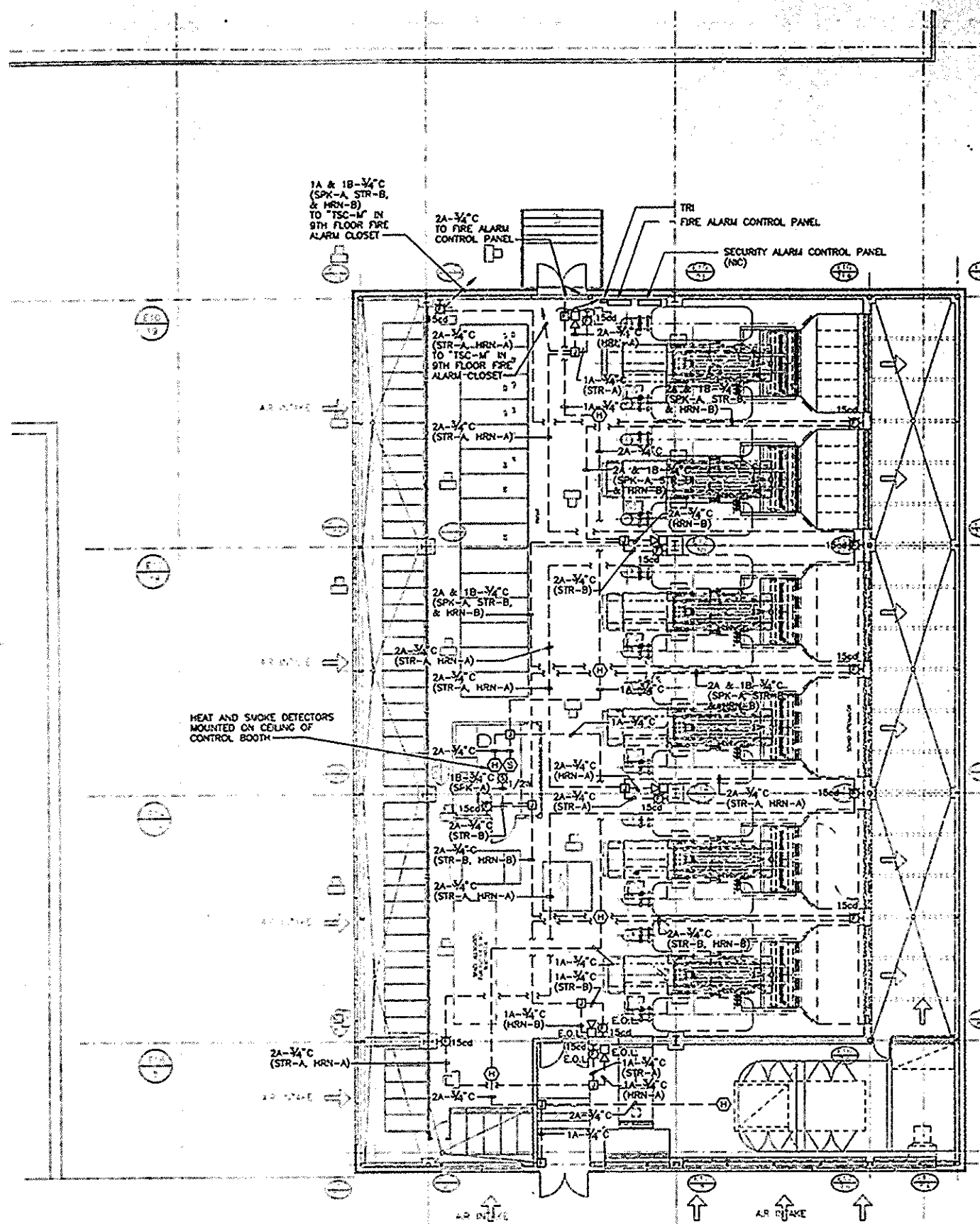
DATE 11/16/98 *Stephen A. Adam*
DATE 11/10/98 *P.L. Loring*
ENGINEER OF DESIGN

| No. | Date | Revision | Approved |
|--|----------|----------------|----------|
| 1 | 11/17/97 | ISSUED FOR BID | |
| Engineering Department Design Divisions | | | |
| The World Trade Center | | | |

STANDBY POWER
5 WORLD TRADE CENTER
ELECTRICAL
GENERATOR ROOM
FIRE ALARM

This drawing subject to conditions in contract. All inventions, ideas, designs and methods herein are reserved to Port Authority and may not be used without its written consent.

P.J. M.A.R.
Designed By Drawn by check by
Date 11/17/97 AS NOTED
Contract Number Drawing Number
WTC-945.071 E2-02



FIRE ALARM RISER DIAGRAM
NOT TO SCALE

| STROBE CIRCUIT/LOADING TABLE | | | | |
|-----------------------------------|------|------------------------------|--------------------------|---------------------|
| STROBE TYPE | TYPE | 75°C CURRENT PER CIRCUIT (A) | 75°C CIRCUIT LENGTH (FT) | CIRCUIT LENGTH (FT) |
| STR-A | 6 | 0.48 | 300 | 300 |
| STR-B | 7 | 0.56 | 290 | 290 |
| QUANTITIES OF STROBES PER CIRCUIT | | | | |
| GRAND TOTAL | | 1.04 | 590 | |

| SPEAKER CIRCUIT/LOADING TABLE | | | | |
|------------------------------------|---------|-----|---------------------|---------------------|
| SPEAKER TAP @ SETTING | (WATTS) | 1/2 | TOTAL POWER (WATTS) | CIRCUIT LENGTH (FT) |
| SPKR-A | 1/2 | 1/2 | 150 | 150 |
| QUANTITIES OF SPEAKERS PER CIRCUIT | | | | |

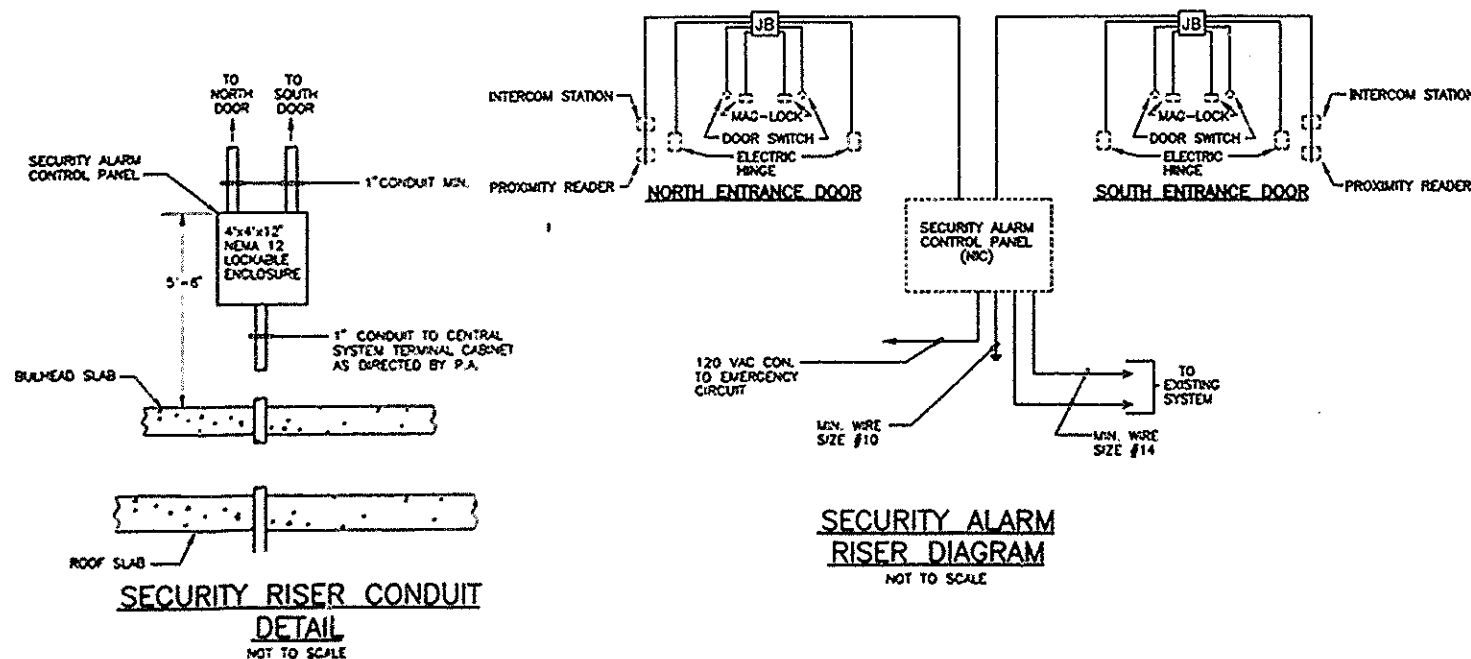
| HORN CIRCUIT/LOADING TABLE | | | | |
|---------------------------------|--------|-----|----------------------------|---------------------|
| HORN @ SETTING | (AMPS) | 0.6 | CURRENT PER CIRCUIT (AMPS) | CIRCUIT LENGTH (FT) |
| HRN-A | 3 | 1.8 | 300 | 300 |
| HRN-B | 2 | 1.2 | 270 | 270 |
| QUANTITIES OF HORNS PER CIRCUIT | | | | |

- LEGEND**
- NUMBER OF CABLES
- TYPE OF CABLE
- A - 2 #14 AWG, 200°C, 600V SHIELDED TWISTED PAIR TEFLOON CABLE, CLASS "C" & BSA APPROVED N.Y.C. FOR LOCAL LAW #5.
- B - 2 #14 AWG, 200°C, 600V UNSHIELDED TWISTED PAIR TEFLOON CABLE, CLASS "E" & BSA APPROVED N.Y.C. FOR LOCAL LAW #5.
- XXX-XXX - ALD LOOP DEVICE ADDRESS: FIRST THREE DIGIT REPRESENT NETWORK/LOOP ADDRESS (AS DIRECTED BY ENGINEER), AND LAST THREE DIGIT REPRESENT DEVICE ADDRESS.
- 15cd - FLUSH MOUNTED STROBE WHEELLOCK, CANDELA RATING AS INDICATED. MODEL # AND ORDER AS FOLLOWS:
15cd - RSS-2415W-FR
30cd - RSS-2430W-FR
75cd - RSS-2475W-FR
NO SUBSTITUTIONS.
- 15cd - POLARIZED ELECTRONIC HORN PYROTRONICS MODEL SEA-3. NO SUBSTITUTIONS.
- 15cd - ADDRESSABLE PULL STATION, PYROTRONICS MODEL #A51-C52. METAL SURFACE MOUNTED. BACKBOX MS-58 CLASS E WITH NYC WHITE STRIP. NO SUBSTITUTIONS. FURNISHED BY PORT AUTHORITY.
- 15cd - WALL MOUNTED SQUARE SPEAKER, WHEELLOCK MODEL #E70-K. WITHOUT SUBSTITUTION. TAP SETTING AS INDICATED. WITH BACK BOX #58B.
- 15cd - ADDRESSABLE KINZATION HIGH VELOCITY SMOKE DETECTOR PYROTRONICS MODEL #FP-11 WITH BASE #DB-11. NO SUBSTITUTIONS. FURNISHED AND INSTALLED BY CONTRACTOR.
- 15cd - OPEN AREA HEAT DETECTOR - RATE COMPENSATION - 200°F PYROTRONICS MODEL #OT-2000L. NO SUBSTITUTIONS. FURNISHED AND INSTALLED BY CONTRACTOR.
- 15cd - PYROTRONICS MODEL TR-850 DUAL ADDRESSABLE INTERFACE SWITCH MODULE MOUNTED IN 6" x 6" x 4" PULLBOX. FURNISHED AND INSTALLED BY CONTRACTOR.
- E.O.L. - END OF LINE (1/2 WATT 24K Ω.O.H.) RESISTOR. FURNISHED AND INSTALLED BY CONTRACTOR.
- 15cd - SQUARE PULL BOX 4 1/16" - UNLESS OTHERWISE NOTED.
- 15cd - EXISTING TERMINAL STRIP CABINET.
- 15cd - EXISTING ADDRESSABLE TERMINAL CABINET.

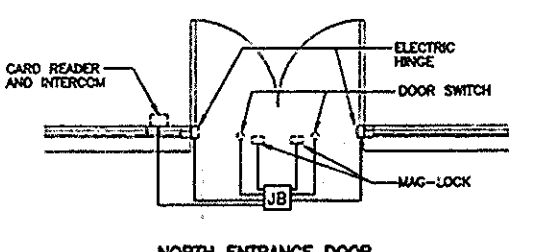
FIRE ALARM (F.A.) NOTES:

1. ALL FIRE ALARM CABLES SHALL BE TYPE FPLP-UL TWISTED PAIR #14 GAUGE SOLID COPPER (NOLLY 300°C, 600V SHIELDED EXCEPT FOR SPEAKERS WHICH USE UNSHIELDED). INSULATED CONDUCTORS CLASS "C" BSA AND MEA APPROVED FOR NYC LOCAL LAW #5 FEP (TEFLON OR APPROVED EQUAL) INSULATION, AND CONDUCTORS COLORED BLACK AND RED. ALL CABLES TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR.
2. ALL CONDUITS SHALL BE RIGID STEEL, 1/2" DP-CD GALVANIZED WITH THREADED FITTINGS, UNLESS OTHERWISE NOTED.
3. ALL RACEWAY, ENCLOSURES AND BOXES SHALL BE GROUNDED IN AN APPROVED MANNER.
4. GROUND BUSHING SHALL BE INSTALLED ON ALL CONDUITS PENETRATING ENCLOSURES.
5. ALL PENETRATIONS MADE IN EXISTING FIRE ALARM EQUIPMENT SHALL BE MADE IN PRESENCE OF THE ENGINEER.
6. SHAPING AND LABELING OF CABLES AT INTERFACE, XNET, TSC, ATC AND NTC CABINETS WILL BE PERFORMED BY THE CONTRACTOR. THIS WORK SHALL BE DONE IN PRESENCE OF THE ENGINEER. FINAL CONNECTIONS TO INTERFACE, XNET, TSC, ATC AND NTC CABINETS WILL BE MADE BY OTHERS.
7. PATCH AND SEAL ALL CONDUITS PASSING THRU WALLS, FIRE RATED CONSTRUCTION AND PLENUMS WITH THERMAWALL OR RICC FLAME-SAFE.
8. TEST ALL REELS OF FIRE ALARM CABLE FOR CONTINUITY AND SHORTS, PRIOR TO INSTALLATION.
9. CONTRACTOR SHALL USE BRADY LABELS #MNL-205-292-1 FOR LABELING OF ALL CONDUITS.
10. ALL BOX COVERS, CONDUIT COVERS, ETC. SHALL BE PAINTED RED, USE "F" STENCIL, AND WHITE PAINT ON ALL COVERS INDICATING "F" FOR 5 WTC SYSTEM DESIGNATION.
11. CONTRACTOR SHALL PERFORM PROGRAMMING OF ALL ADDRESSABLE DEVICES, FINAL CONFIGURATION OF ADDRESSES SHALL BE AS DIRECTED BY THE ENGINEER, PRIOR TO PROGRAMMING DEVICES.
12. FINAL CONNECTIONS TO THE BULKHEAD FIRE ALARM AND TSC WILL BE MADE BY OTHERS. CONTRACTOR TO LEAVE 5' COIL OF CABLE INSIDE THE TSC CABINET. THIS WORK SHALL BE DONE IN PRESENCE OF THE ENGINEER.

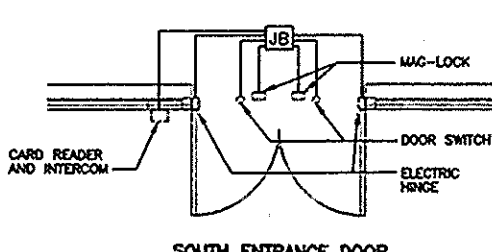
**5 WTC STANDBY GENERATOR BULKHEAD
FIRE ALARM AND SECURITY SYSTEM**



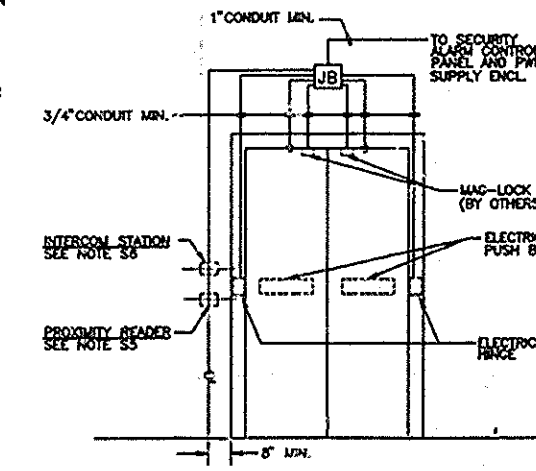
**SECURITY ALARM
RISER DIAGRAM**
NOT TO SCALE



NORTH ENTRANCE DOOR



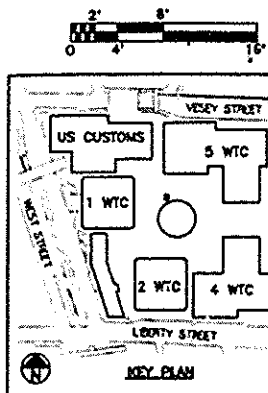
SOUTH ENTRANCE DOOR



**DOOR ALARM DEVICE LOCATION
TYPICAL FOR 2
(EMPTY CONDUIT ONLY)**
NOT TO SCALE

SECURITY ALARM NOTES:

51. FOR GENERAL NOTES AND SYMBOL LIST SEE DRAWING EO-01.
52. ALL SECURITY RACEWAY INSTALLATION SHALL BE COORDINATED WITH THE P.A.
53. CONTRACTOR TO OBTAIN FROM THE P.A. DEVICE OUTLET BOXES FOR VARIOUS TYPE OF SECURITY DEVICES. DEVICE OUTLET SHALL MEET THE REQUIREMENTS OF DEVICE TO BE INSTALLED.
54. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL EMPTY CONDUITS WITH DRAG WIRE. TERMINATE ALL CONDUITS AT DEVICE OUTLET BOXES, COORDINATE LOCATION WITH INSTALLATION DRAWINGS TYPICAL FOR ALL DEVICES.
55. TERMINATE EMPTY CONDUIT AT LOCATION OF OUTLET BOX. PROXIMITY READER OUTLET BOX(ING) LOCATION AT 36" AFF. ROUTE CONDUIT TO JUNCTION BOX ABOVE DOOR.
56. TERMINATE EMPTY CONDUIT AT LOCATION OF OUTLET BOX. INTERCOM STATION OUTLET BOX(ING) LOCATION AT 50" AFF. ROUTE CONDUIT TO JUNCTION BOX ABOVE DOOR.



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